CLAIMS

1. A method for monitoring a tyre (1) during running, said tyre having a tread area (T), the method comprising the steps of:
   - acquiring and storing, at least temporarily, a first curve representing an acceleration profile of a first point (11, 12, 13) of the tread area (T) of said tyre, located on a meridian plane of said tyre;
   - acquiring and storing, at least temporarily, at least a second curve representing the acceleration profile of a second point (11, 12, 13) of the tread area of said tyre, located substantially on said meridian plane;
   - comparing said first and second curves, or parameters derived thereof, so as to determine a dynamic behavior of said tyre.

2. A method according to claim 1, further comprising the step of:
   - acquiring and storing, at least temporarily, at least a third curve representing the acceleration profile of a third point (11, 12, 13) of the tread area of said tyre, being located substantially on said meridian plane.

3. A method according to claim 2, wherein said step of comparing comprises comparing said first, second and third curves, or parameters derived thereof.

4. A method according to any one of claims 1 to 3, wherein said first point is located in a first shoulder region of said tread area.

5. A method according to any one of claims 1 to 4, wherein said second point is located in a second shoulder region of said tread area, opposite to the first shoulder region with respect to an equatorial plane of said tyre.

6. A method according to any one of claims 2 to 5, wherein said third point is located substantially on the equatorial plane of said tyre.

7. A method according to any one of claims 1 to 6, wherein said first, second and third points are located on an inner surface of said tyre.

8. A method according to any one of claims 1 to 7, wherein said step of comparing comprises comparing a distance between characteristic peaks of said first curve with a distance between corresponding peaks of said second curve.

9. A method according to any one of claims 1 to 7, wherein said step of comparing comprises comparing said first curve and said second curve point by point, for an entire revolution of said tyre.

10. A method according to any one of claims 1 to 7, wherein said step of comparing comprises comparing at least one characteristic peak of said first curve with a corresponding at least one peak of said second curve.

11. A method according to claim 10, wherein said step of comparing comprises comparing an amplitude of said at least one peak of the first curve with an amplitude of said corresponding at least one peak of the second curve.

12. A method according to any one of claims 1 to 7, wherein said step of comparing comprises comparing an area under at least a portion of said first curve with an area under a corresponding portion of said second curve.

13. A method according to any one of claims 1 to 7, wherein said step of comparing comprises comparing a width of at least a portion of said first curve with a width of a corresponding portion of said second curve.

14. A tyre (1) comprising at least a first group (21, 22, 23) of sensors located in a first circumferential position of said tyre, said first group of sensors including:
- a first acceleration sensor (11, 12, 13), associated with a first point of the tread area (T) of said tyre, located on a meridian plane of said tyre;
- at least a second acceleration sensor (11, 12, 13), associated with a second point of the tread area of said tyre, located substantially on said meridian plane.

15. A tyre according to claim 14, wherein said first group of sensors includes at least a third acceleration sensor (11, 12, 13), associated with a third point of the tread area of said tyre, located substantially on said meridian plane.

16. A tyre according to claim 14 or 15, wherein said first point is located in a first shoulder region of said tread area.

17. A tyre according to any one claims 14 to 16, wherein said second point is located in a second shoulder region of said tread area, opposite to the first shoulder region with respect to an equatorial plane of said tyre.

18. A tyre according to any one of claims 15 to 17, wherein said third point is located substantially on the equatorial plane of said tyre.

19. A tyre according to any one of claims 14 to 18, wherein said first, second and third points are located on an inner surface of said tyre.

20. A tyre according to any one of claims 14 to 19, wherein said first, second and third points are misaligned of an angle not greater than 5°.

21. A tyre according to claim 20, wherein said first, second and third points are misaligned of an angle not greater than 3°.

22. A tyre according to claim 21, wherein said first, second and third points are misaligned of an angle not greater than 1°.

23. A tyre according to any one of claims 14 to 22, wherein said first and second points are located at a distance from the equatorial plane of the tyre comprised between 15% and 30% of the whole tread width.

24. A tyre according to claim 23, wherein said distance is comprised between 18% and 28% of the whole tread width.

25. A tyre according to claim 24, wherein said distance is comprised between 20% and 25% of the whole tread width.

26. A tyre according to any one of claims 14 to 25, further including at least a second group (21, 22, 23) of said sensors, located in a second circumferential position of said tyre, spaced from said first circumferential position of a predetermined angle.

27. A tyre according to claim 26, further including at least a third group of said sensors (21, 22, 23), the first, second and third group of sensors being spaced one from each other of substantially the same angle.

28. A tyre according to any one of claims 14 to 27, wherein each of said acceleration sensors includes an elaboration unit.

29. A wheel for a vehicle, including a rim and a tyre according to any one of claims 14 to 28.

30. A wheel according to claim 29, including a further acceleration sensor associated with said rim.

31. A system for monitoring a tyre (1) during running, including a tyre (1) comprising at least a first group (21, 22, 23) of sensors and a receiving device associated with at least said first group of sensors, said first group of sensors including:
- a first acceleration sensor (11, 12, 13), associated with a first point of the tread area (T) of said tyre, located on a meridian plane of said tyre;
- at least a second acceleration sensor (11, 12, 13), associated with a second point of the tread area of said tyre, located substantially on said meridian plane.

32. A system according to claim 31, wherein said receiving device comprises a receiver and an elaboration unit.

33. A system according to claim 31 or 32, wherein said tyre is a tyre according to any one of claims 9 to 21.

34. A method for controlling a vehicle, comprising the steps of:
- providing in at least one tyre (1) mounted on the vehicle at least a first group of sensors (21, 22, 23) including at least a first acceleration sensor (11, 12, 13) associated with a first point of a tread area (T) of said tyre and at least a second acceleration sensor (11, 12, 13) associated with a second point of said tread area, said first and second points being both located substantially on a same meridian plane of said tyre;
- acquiring and storing, at least temporarily, at least a first acceleration curve from said first acceleration sensor and at least a second acceleration curve from said second acceleration sensor;
- comparing said first and second curves, or parameters derived thereof;
- identify a manoeuvre of said vehicle from said comparison.

35. A method according to claim 34, further including the steps of:
- revealing, from said comparison, whether a critical condition is being reached during said manoeuvre;
- if a critical condition is being reached, generating a signal adapted to cause a counteraction to control the vehicle.

36. A method according to claim 35, wherein said signal is adapted to activate an alarm for a driver of the vehicle.

37. A method according to claim 35, wherein said signal is adapted to activate an auto-control system of the vehicle.